

## 1983 Base

### Definition

*The 83 Base represents the authorized canal levels and operations prior to the Experimental Water Deliveries program. It represents what the USACE would revert to should Test 7 be stopped.*

In order to define *what* the authorized canal levels and operations *were* at the inception of the Experimental Water Deliveries program, an interagency team (referred to as the Interim Measures Team or IMT) met at the U.S. Army Corps of Engineers offices in Jacksonville (Nov 5 and 6, 1998) and went through the relevant design memoranda to determine and document the authorized canal levels and operations circa 1983. Table 1 represents the documentation of the 1983 Base by this team. References to the relevant authorizing documents are given wherever possible, with official letters prior to 1969 being regarded as authorizing documents. In Table 1 open and close elevations are given for structures authorized to be used for flood control purposes. Deliveries for water supply begin when canal levels downstream drop to 1.5 feet below the authorized optimum canal stage.

### No Action Assumptions

In order for the 1983 Base to be a "no action alternative" that could be reverted to should Test 7 be stopped, operations and conditions that would be reverted to as part of the 1983 Base needed to be defined. In general the current operations, demands and land use would apply outside of the region who's water control was altered as part of the Experimental Water Deliveries Program. Specifically the following would apply for the 1983 base:

1. EAA Best Management Practices (BMP) Replacement Water Rule would continue according to current operations (as represented in the 1995 Base).
2. Lake Okeechobee Supply Side management would continue according to current operations (as represented in the 1995 Base).
3. Land use would remain as it currently is.
4. Current public water supply demands would apply. (as represented in the 1995 Base).

### Simulation of the 83 Base (83BSSTA)

For purposes of modeling the 83 Base in the South Florida Water Management Model (SFWMM v3.7) as part of the Modified Water Deliveries project, several assumptions were made in order to make the comparison of the 83 Base simulation with the other simulated alternatives meaningful. These assumptions are as follows:

- Estimated 1995 land use (as represented in the 1995 Base for both the Restudy and Lower East Coast Water Supply Plan) would be used.
- Public water supply demands would be the same as those used in the SFWMMv3.7, 1995 Base simulation for the Lower East Coast Water Supply Plan (LEC95).
- Storm Water Treatment Areas (STA's) would be included, hence the acronym 83BSSTA.
- The S12's would be operated according to the Minimum Delivery Schedule.
- The Zone-A/Zone-E regulation schedule (9.5/10.5 ft) would be used in WCA-3A.

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- Other Water Conservation Areas would be operated according to current schedules (not rain driven).
- Lake Okeechobee would be operated according to the Water Supply Environment (WSE) schedule (SFWMD, 1998).
- Tidal structures are operated according to Table 2 to be more consistent with current system operations outside of Experimental Water Deliveries water control area.

The following assumptions in the 83 Base are also common to the 95 Base simulation:

- There are constraints at Tamiami Trail
- L67 extension is still in place
- C111 project not in place

Table 1. Base 1983: Canal levels and operations for the Experimental Water Deliveries Program area, as authorized prior to the Experimental Water Deliveries Program (all stages given in feet above sea level).

Canal	Structure	Operational criteria				Reference
		Flood Control (FC)		Water Supply (WS)	Other Criteria	
		Open	Close	Optimum		
L-28	S-344				According to Pre-EWD WCA-3A Regulation Schedule (9.5' to 10.5') Limited to max of 135 cfs	p9 SFWMD 89-3 <sup>ref 9</sup>
	S-343 A&B				According to Pre-EWD WCA-3A Regulation Schedule (9.5' to 10.5') Limited to max of 390 cfs	p9 SFWMD 89-3 <sup>ref 9</sup>
	S-12 A-D				Minimum Water Delivery Schedule (in 1000 ac-ft per month) J F M A M J J A S O N D Total 22 9 4 1.7 1.7 5 7.4 12.2 39 67 59 32 260	PL 91-282 and <sup>ref 11</sup> p23 SFWMD 89-3 <sup>ref 9</sup>
	S-333				Water Supply to South Dade Only	Flood control not mentioned in any of GDM's/DDM's
	S-334				Water Supply to South Dade Only	
L-30	S-335	If HW above 7.0 ft, flood control release according to Q=CLH <sup>3/2</sup>		6.0	Water Supply Structure. Top of closed gates is 1 ft above optimum, hence overtopping in case of stages > 1 ft above optimum.	
L-31N	G-211				Remove for modeling purposes Operationally would set open if revert to Base 1983.	
	S-173/S-331			5.0	Water Supply to South Dade Only	Part V Supp 52 p26 <sup>ref 13</sup>
	S-176	5.7	5.3	5.5		FC: Part V Supp 37 ltr. <sup>ref 12a</sup> WS: Part V Supp 52 p26 <sup>ref 13</sup>
	S-174	5.5	5.1	5.5		Part V Supp 37 leters <sup>ref 12a</sup>
L-31W	S-332				Taylor Slough Minimum Water Delivery Schedule J F M A M J J A S O N D Total cfs 12 6.7 3 3.1 6 112 120 48 100 126 62 12 Kaf .7 .4 .2 .2 .4 6.7 7.4 2.9 6 7.7 3.7 .7 37	PL 91-282. <sup>ref 11</sup>
	S-175	5.2	4.5	4.5		FC: Part V Supp 37 p39 <sup>ref 12</sup> WS: Part V Supp 52 p26 <sup>ref 13</sup>
C-111	S-177	5.2	4.3	4.5		FC: Part V Supp 37 p37 <sup>ref 12</sup> WS: Part V Supp 52 p26 <sup>ref 13</sup>
	S-18C	2.4	1.6	2.0	Minimum Water Delivery Schedule (in 1000 ac-ft per month) J F M A M J J A S O N D Total 1.5 .6 .3 .1 .1 .3 .5 .9 2.7 4.6 4.1 2.2 18	FC:Ltr Report Sept 1967 <sup>ref 1</sup> WS: PL 91-282. <sup>ref 11</sup>
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Table 1. Base 1983: Canal levels and operations for the Experimental Water Deliveries Program area, as authorized prior to the Experimental Water Deliveries Program (all stages given in feet above sea level).

Canal	Structure	Operational criteria				Reference
		Flood Control (FC)		Water Supply (WS)	Other Criteria	
		Open	Close	Optimum		
	S-197		1.9		Open 3 gates if S-177 open & S-177>4.1 or S-18C>2.8, Open 7 gates if S-177>4.2 or S-18C>3.1, Open 13 gates S-177>4.3 or S-18C>3.3, Close when all following conditions are met: 1) S-176<5.2 and S-177<4.2, 2) Storm moved away from basin, and 3) after 1 and 2 are met, keep the number of S-197 culverts open necessary only to match residual flow through S-176. All culverts closed if S-177<4.1 after all conditions satisfied. In SFWMM flow is limited to keep stage above the gate closed levels.	Permit application. <sup>ref 10</sup>
C-4	S-25B	2.7	2.3	2.5		Part V Supp 46 p9b,10 <sup>ref 7</sup>
C-2	S-22	3.0	1.8			Part V Supp 14 p27 <sup>ref 2</sup>
C-100	S-118	5.4	3.5			Part V Supp 36 p14 <sup>ref 4</sup>
	S-119	5.4	4.2			Part V Supp 36 p14 <sup>ref 4</sup>
	S-123	2.4	1.6			Part V Supp 36 p13 <sup>ref 4</sup>
C-1	S-338	5.2 in L-31N @S-331 HW	4.8 in L-31N @S-331 HW	5.0		Part V Supp 52 p26 <sup>ref 13</sup>
	S-148	5.5	3.7	5.0		Part V Supp 52 p26 <sup>ref 13</sup>
	S-21	2.4	1.5	2.0		Part V Supp 31 p11 <sup>ref 3</sup>
C-102	S-194				Water Supply to South Dade Only	Part V Supp 39 p4 <sup>ref 5</sup>
	S-165	5.9	5.1	5.5		Part V Supp 39 p4 <sup>ref 5</sup>
	S-21A	2.4	1.6	2.0		Part V Supp 37 p36 <sup>ref 12</sup>
C-103	S-196				Water Supply to South Dade Only	Part V Supp 39 p4 <sup>ref 5</sup>
	S-167	5.9	5.1	5.5		Part V Supp 40 p4 <sup>ref 6</sup>
	S-179	3.9	3.1	3.5		Part V Supp 40 p4 <sup>ref 6</sup>
	S-20F	2.4	1.6			Part V Supp 40 p4 <sup>ref 6</sup>

**References for Table 1:**

1. Central and Southern Florida Project, Letter Report Control Structure 197 in Canal 111, September 1967.
2. Coastal Areas South of St Lucie Canal, Supplement 14, Detailed Design Memorandum, Part V, Oct 1, 1954.
3. Coastal Areas South of St Lucie Canal, Supplement 31, Detailed Design Memorandum, Part V.
4. Coastal Areas South of St Lucie Canal, Supplement 36, Detailed Design Memorandum Part V.
5. Coastal Areas South of St Lucie Canal, Supplement 39, Detailed Design Memorandum, Part V, Nov 19, 1964.
6. Coastal Areas South of St Lucie Canal, Supplement 40, Detailed Design Memorandum Part V.
7. Coastal Areas South of St Lucie Canal, Supplement 46, Detailed Design Memorandum Part V.

Table 1. Base 1983: Canal levels and operations for the Experimental Water Deliveries Program area, as authorized prior to the Experimental Water Deliveries Program (all stages given in feet above sea level).

8. Flood Control for South Dade, General Design Memorandum Supplement 37 Part V.
9. Neidrauer, C.J. and Cooper, R.M., 1989. A Two-Year Field Test of the Rainfall Plan: A Management Plan for Water Deliveries to Everglades National Park. SFWMD tech. Pub. 89-3
10. Permit Application for S-197 by SFWMD submitted to Department of Environmental Protection, May 1990.
11. PL 91-282
12. South Dade Conveyance System, Supplement 37, General Design Memorandum, Part V, September 1963.
- 12a. Letter to Central and Southern Florida Flood Control District, West Palm Beach, from Joe Kaperski, Chief of Engineering, USACE, in Part V, Supp. 37.
13. South Dade Conveyance System, Supplement 52, General Design Memorandum, Part V, June 1973.

Table 2. Canal levels and operations used in SFWMMv3.7 simulation of the 83 Base (83BSSTA) that are different from those in extracted from the design memoranda detailed in Table 1 (all stages given in feet above sea level).

Canal	Structure	Flood Control (FC)		Other Criteria
		Open	Close	
C-4	S-25B	3.5	3.0	
C-2	S-22			Release water when stage > 3.0
C-100	S-123			Release water when stage > 3.0
C-1	S-21			Release water when stage > 2.0
C-102	S-21A			Release water when stage > 1.8
C-103	S-20F			Release water when stage > 1.5 in dry season, >1.8 in wet season